



ACPA Newsletter

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Nematodes in Soybeans: Knowledge is Power

By: Dr. Terry Kirkpatrick, Professor, Plant Pathology, University of Arkansas

The Arkansas Soybean Promotion Board in partnership with the Division of Agriculture Arkansas Nematode Diagnostic Laboratory will be offering a “no cost” opportunity for county agents, consultants, and growers to survey their soybean fields for nematode by providing nematode assays free of charge. Fields that are in soybean this year or that may be planted to soybean next year are candidate fields for this survey. Nematodes have been called the “hidden enemy” of soybean because these soilborne, microscopic root pathogens can go unnoticed in a field until yield losses become severe. In the past few years, the Arkansas Nematode Diagnostic Laboratory has seen an alarming increase in the incidence of root-knot nematodes in samples from soybean. It is likely that conversion of historical cotton acreage to soybean and corn production has led to a dramatic increase in the incidence and severity of root-knot statewide. Root-knot has a wide host range that includes corn and cotton as well as soybean, and it can flourish

across a range of soil types from silt loam to sand.

As indicated in the title, knowledge is power. The first step in a successful nematode management program is to understand where the nematodes are located. Not all fields have a nematode problem, but those that do can be costly. Guessing without actually knowing if a nematode problem exists can also be costly. The best way to find out where (and how many) nematodes occur is through a soil sample for nematode assay. Early fall is the optimum time to sample for nematodes. Why not take advantage of your check-off dollars at work and find out if nematodes are a problem (or a potential future problem) on your or your client’s farm? For details about this survey, to participate in this free assay program, or for information on proper sampling and handling of samples, contact your local county agent, the Arkansas Nematode Diagnostic Laboratory at: (870) 777-9702, extension 128, email: choward@uaex.edu, or call Terry Kirkpatrick at (903) 276-4484.



Severe root galling due to root-knot nematodes .



Pods produced on a root-knot infected (R) and a healthy soybean plant (L). Photos by Travis Faske.

Dr. Tom Barber ACMC Program Chairman Announces Planning Meeting for 2015

The 2015 Arkansas Crop Management Conference planning meeting will be held on Thursday August 28 at Adveda’s restaurant in Carlisle. The focus of the planning meeting on the 28th will be to develop topics and symposia that will introduce new ideas and methods to control new and old problems. The planning committee is made up of representatives from the Ag Consultants, Arkansas Crop Protection Association, Arkansas Plant Food Association and the Certified Crop Advisors Association as

well as U of A Division of Agriculture representatives. If you have any ideas that should be considered as topics for the 2015 meeting, please get with the leadership or representative of one of the associations. The 2015 ACMC is scheduled for January 20-22. The meeting format will remain the same, starting with a general session the first morning, with breakout sessions to follow. We will work hard to develop a program to bring the latest in information and technology to the Arkansas

agriculture industry. Please contact your group representatives (listed below) with any topics you would like to see covered at the 2015 ACMC. Tom Barber – Chair of program committee
Don Johnson – Executive VP ACPA
Brad Koen – Representative from consultants association
Josh Long – Representative Plant Food
Bob Griffin – Representative CCA

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Special points of interest:

- Nematodes are “hidden enemy” of soybeans according to Dr. Terry Kirkpatrick.
- Arkansas Crop Management Conference January 20-22, 2015.
- ACPA Research Conference December 1-2, 2014.
- Folks nervous over introduction of Dicamba and 2 4 D tolerant crops.
- Sugarcane aphid in grain sorghum may be treated with Transform.
- Introduced invasive weed in United States.

Herbicide Tolerant Soybean and Cotton: Love or Hate the Idea of Dicamba and 2,4-D Tolerant Crops, They Are What's Next!

By: Dr. Bob Scott, Extension Weed Scientist, University of Arkansas Division of Agriculture



“What would you do in soybean if the PPO chemistry (Valor, Flexstar) suddenly stopped working? “

Dow Agro Sciences just announced the completion of the Final Environmental Impact Statement by the USDA thus passing a major hurdle towards deregulation and registration of GMO 2,4-D tolerant Corn and Soybean (both Enlist and E3, tolerance to glyphosate, 2,4-D and glufosinate-Liberty). As most of you know 2,4-D will control glyphosate resistant pigweed and other tough broad-leaf weeds, but has no activity on grasses. The Enlist technology also brings the added resistance management bonus of built in tolerance to glufosinate. With this announcement the likely hood of a 2015 launch is very high right now at least for limited acres in the South, with cotton to follow in 2016. Monsanto Company continues to plow forward full steam with the introduction of dicamba-tolerant crops (Roundup Ready Xtend). They hope to have deregulation of their cotton trait in time to sell some in 2015 and have been ramping up seed production right here in Arkansas on some pretty large acres. It is possible that Xtend soybean will also be deregulated in time for 2015; however a major hold up for them right now is world-wide acceptance (mainly China) of the GMO trait. This world acceptance issue will likely hold dicamba tolerant soybean up until at least 2016. Dicamba will control glyphosate resistant pigweed and all the other resistant broadleaf weeds we currently have in Arkansas. Like 2,4-D, it will not control grasses and a program approach will be need to prevent glyphosate resistant grass from developing under this system. 2,4-D and Dicamba are two

different herbicides. Often times through this regulatory process they are referred to together as though they are virtually the same. They are both growth regulator type herbicides. Both have a history of drift issues in the State.

Most people know that cotton is very sensitive to 2,4-D at very low amounts, making drift or other off target movement a problem. Soybeans are just as sensitive to dicamba as cotton is to 2,4-D. Although soybean can tolerate some injury without yield loss early on, there is a stage during late flowering and early R1-2 that we do seed yield loss in soybean from dicamba drift even at low rates. The injury symptoms are mainly a “cupping” of the leaves early one but can be bloom shed and misshapen pods if drift happens later. In later reproductive stages R4-5 beans again become more tolerant to dicamba.

A little further away in terms of development are the HPPD soybeans which will have the glufosinate and glyphosate stacked traits. HPPD chemistry is available from both Bayer and Syngenta. This technology is currently used in corn in products like Balance and Callisto. Eventually this technology will likely be stacked with dicamba and/or 2,4-D tolerance.

There are a lot of folks nervous about what will happen when these technologies are used in mass quantities across the south. As someone who has to go look at a lot of herbicide injury and drift fields I am one of them. Some of these people ask me “do we really need this technology?” my answer is yes because it is what is next. No we are getting by, barely, with the tech-

nology we have in soybean and cotton right now. But if you are a cotton farmer ask yourself, what would I do if liberty stopped working on pigweed? What would you do in soybean if the PPO chemistry (Valor, Flexstar) suddenly stopped working?

Are these technologies perfect, will they make it easy like Roundup used to be, the answer to these questions is no. But with no new herbicide modes of action on the market any time soon they are what is next. If we want to continue to stay ahead of the weeds we are going to need new tools.

“There are a lot of folks nervous about what will happen when these technologies are used in mass quantities across the south.”



Sugarcane Aphid in Grain Sorghum (Milo)

By: Dr. Nick Seiter, Extension Entomologist, University of Arkansas

The sugarcane aphid, a new pest of grain sorghum that has been causing problems for growers in Texas, Louisiana, Oklahoma, and Mississippi, has reached damaging levels in the sorghum producing regions of southeastern and east-central Arkansas. Most sugarcane aphids are wingless and have a pale yellow to whitish coloration and dark cornicles, the “stove pipe” structures located at their rear end which can be seen with magnification (Figure 1). The winged sugarcane aphids that first migrate into fields are darker in coloration (Figures 2). Sugarcane aphids can multiply rapidly, covering the undersides of leaves (Figure 3) before they move to other parts of the plant. In terms of damage, the primary worry at this point in the season is the buildup of the sticky, sugary excrement of the aphids, which is known as honeydew. This material can cause clogging and mechanical problems at harvest if present at high enough levels, with yield

reductions of up to 50% reported in some cases.

Management of this insect could pose a challenge; it has the potential to rapidly multiply, there are limited options for chemical control, and it has only recently become a problem in sorghum in the U.S. The pyrethroids that are often used for midge control do not provide effective control of sugarcane aphid, and could flare aphid outbreaks by eliminating natural enemies (another reason that it is important to scout fields and only apply a midge application if it is needed). A section 18 label exemption has been granted in Arkansas for Transform WG at a rate of 0.75-1.5 oz. of product per acre for control of sugarcane aphid. This product has provided good control in trials conducted in Texas and Louisiana, and has a favorable pre-harvest interval (PHI) of 14 days. Even an effective application at this point in the season might not reach aphids in the lower canopy. However, the

management goal should be to prevent honeydew buildup in the upper part of the canopy and especially the grain head, which should minimize harvest issues.



Figure 1. Stove pipe structures on sugarcane aphids.



Figure 3. Sugarcane aphid population on leaf of grain sorghum.



Figure 2. Aphid darker adult that migrated with developing aphid population.

Research Conference Announced by Arkansas Crop Protection Association Vice President Dr. Jarrod Hardke



Student paper competition is composed of an array of topics on crop related research.

The Arkansas Crop Protection Association (ACPA) will host its annual research conference December 1-2, 2014 in Fayetteville, AR. The conference will be held at the Guesthouse International Hotel (formerly the Clari-on Inn). Conference highlights will include a student paper competition with cash prizes awarded to the top presentations in both Ph.D. and Master’s divisions. Researchers from re-

search, extension, and industry are encouraged to attend and participate by making presentations. Continuing education credits will also be available. A formal call for papers will be sent out in September.



Dr. Jarrod Hardke coordinates the Research Conference for ACPA.

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Benghal Dayflower

An Introduced Invasive Weed in the United States

By: Joel Bard, USDA APHIS PPQ, Little Rock, Arkansas

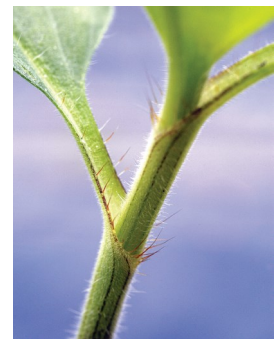
Benghal dayflower, also called Tropical spiderwort, is among the world's worst weeds. It comes from Asia and tropical Africa and was first detected in the United States in 1963. It is now found in Alabama, California, Florida, Georgia, Hawaii, Louisiana, and North Carolina. A Roundup®-resistant weed, it is a menace to more than 20 crops—including economically important ones like cotton and soybeans. This federally regulated weed poses a serious agricultural threat. Benghal dayflower invades areas with moist soil, especially crop fields and pastures, but can also attack roadsides, grasslands, and other disturbed areas. The stem is as-

ending, can extend more than 1 m, and is capable of rooting from nodes. Oval leaf blades are 3–7 cm long by 1–4 cm wide, often with reddish hairs toward the tip. It produces both above-ground and underground flowers. Above ground flowers are small, lilac blue and are about half the size of similar species such as the Asiatic dayflower and the spreading dayflower which are also found in the South. Limited surveys for this weed have been conducted in Arkansas but your assistance will be vital in detecting this weed early enough to prevent it from becoming a problem weed in Arkansas.

For more info check the APHIS mini-risk assessment at:

<http://www.extension.org/pages/62891/commelina-benghalensis-benghal-dayflower#.U7F1f2tOkpH>

Photos are courtesy of Herb Pilcher of USDA ARS.



Top: Benghal dayflower (Tropical spiderwort).
Bottom: reddish hairs toward the tip